

Counting Kansas: GIS in Local 2020 Census Planning

GIS Day @ KU

November 13, 2019

Kansas



State Data Center



What is the Census?

Mandated by the U.S. Constitution, the census is a count of everyone **residing** in the United States: in all 50 states, Washington, D.C., Puerto Rico, U.S. Virgin Islands, Guam, the Commonwealth of the Northern Mariana Islands, and American Samoa.

Market Street

130

Amos Crover & Co. ^{Supreme}				2199	1196	3919	302	49
James Wilson ^{App. Judge}	230	a		3	3	5		
	Vac. 232							
Baltus Emrick	Baker 231	a		1	2	6		
Charles Schultz ^{W. S. Stottz}	Bl Smith 236	a		4		3		
Elizabeth Robins	Widow 238	a				1		
John Hinckle	Proth. 240	a		1	2	3		
	Vac. 242							
Thomas Mungatroyd	Muck. 244	a		1	3	4	2	
Daniel Russell	Gen. 246	a		2	1	3		
Thomas Mifflin ^{Gen. State}	248	a		2		3	2	
Ann York	Widow 250	a			1	2		
	Vac. 252							
John T. DeGraham	Gen. 254	a		1		3		
Benjamin Shoemaker	do 256	a		1	3	4	1	
	Vac. 258							
Henry Kline	Shoemaker 260	a		1	4	1		
	Vac. 262							
	264							
	266							

What is the Census?

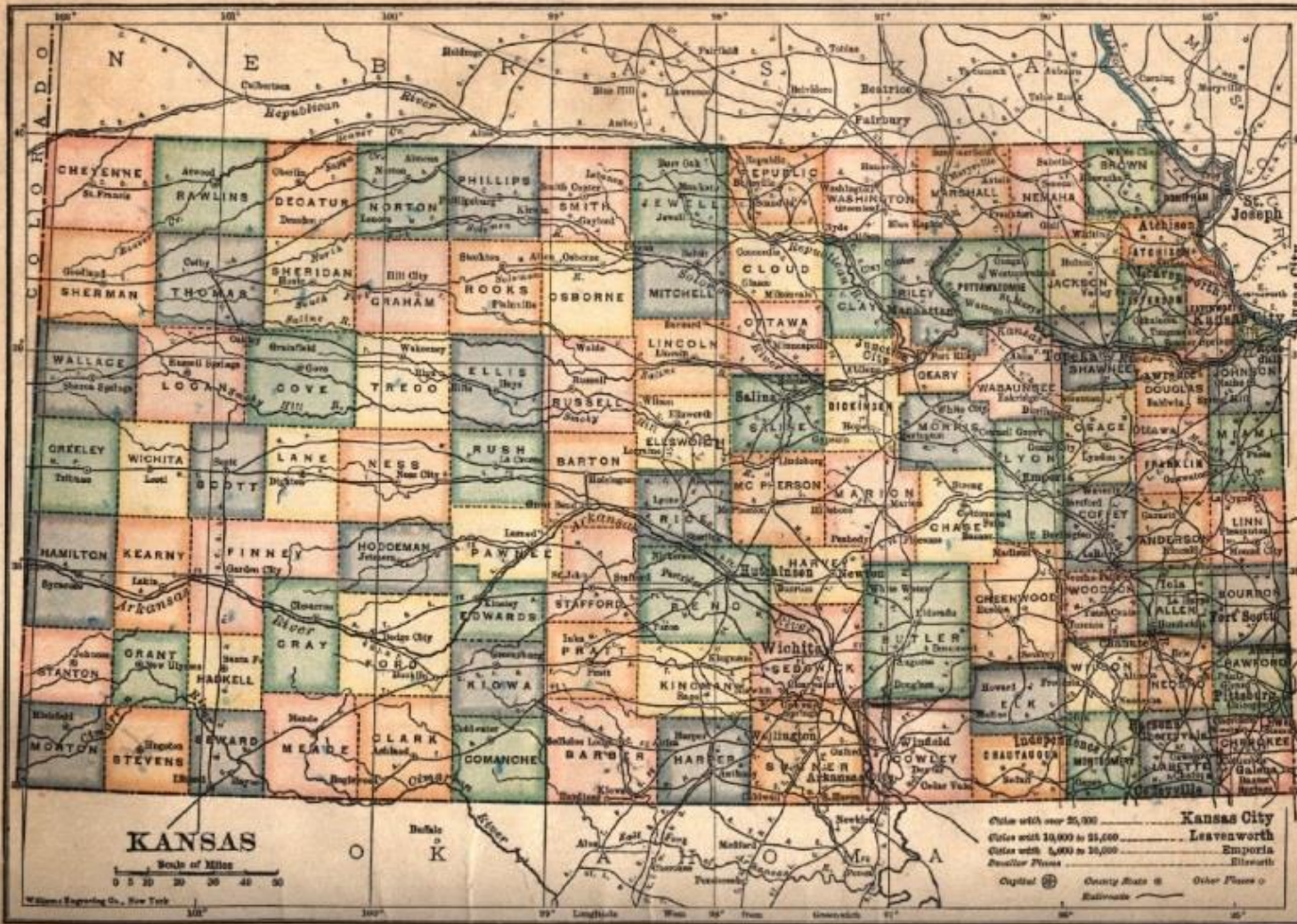
The Census has been conducted starting in 1790 and every 10 years thereafter.

Kansas 1890

"Besides being indicative of economic trends, population data provide an excellent indicator of the relative strength of these economic factors which tend to expand or to contract the community's economy."

"Actually, Kansas achieved its maximum percentage of the population of the United States in the 1890 census, when roughly 2.25% of the United States population lived within the State."

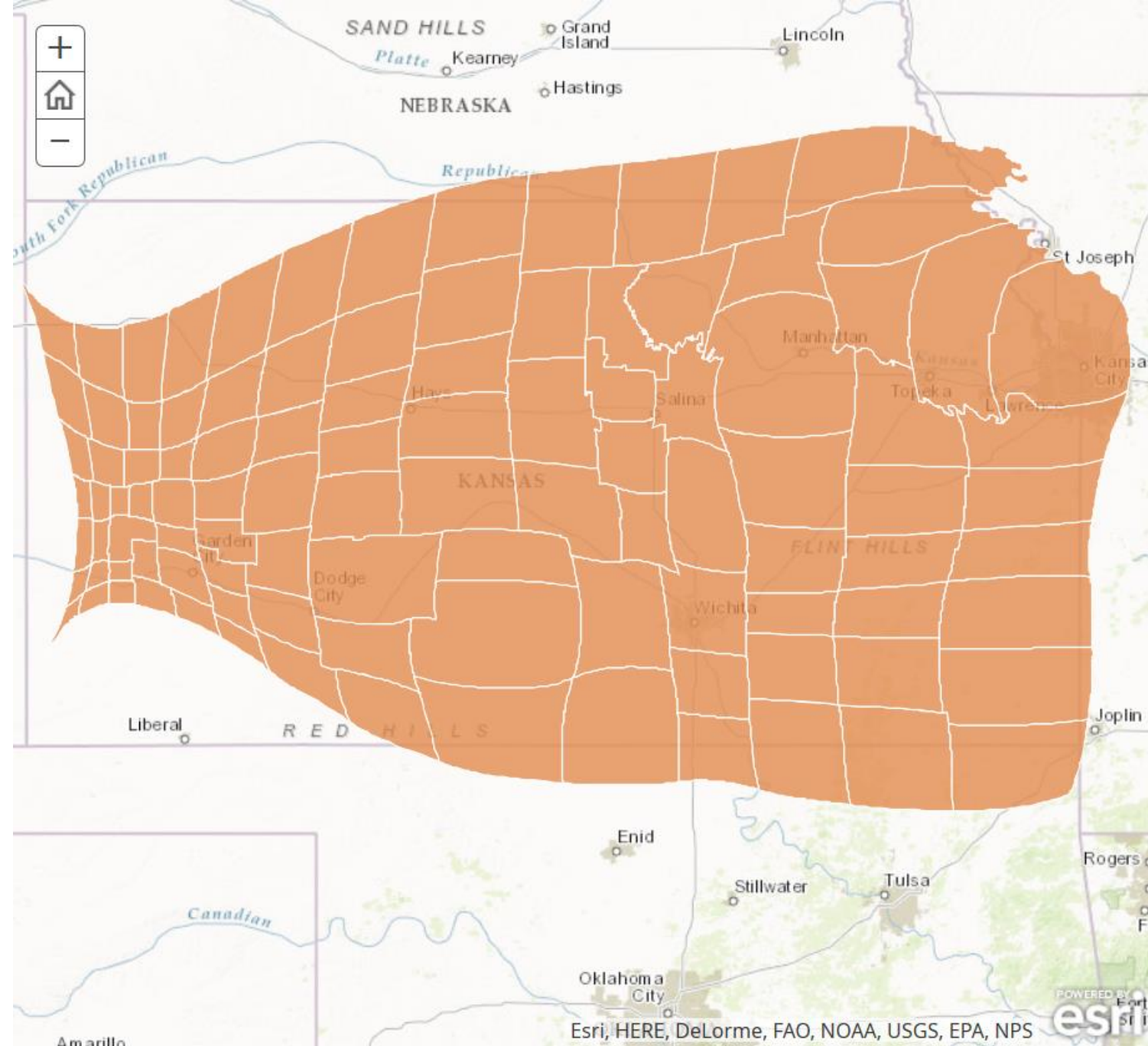
excerpt from "Some Controlling Forces in Kansas Population Movements", J.D. Morgan, Bureau of Business Research, School of Business, University of Kansas (1953).





Kansas Cow Towns

In the late 1800's Kansas, especially the western part of the state, was known for the cattle drives bringing livestock up from Texas to "cow towns" with railheads.



Kansas 1890

Even in the prosperous westward movement years, the population in Northeast Kansas far exceeded the population in the western half of the state.

Viewed here as a cartogram, where county boundaries are stretched to represent the population in 1890, Wyandotte County is the most populous in the state with 54,407 inhabitants.



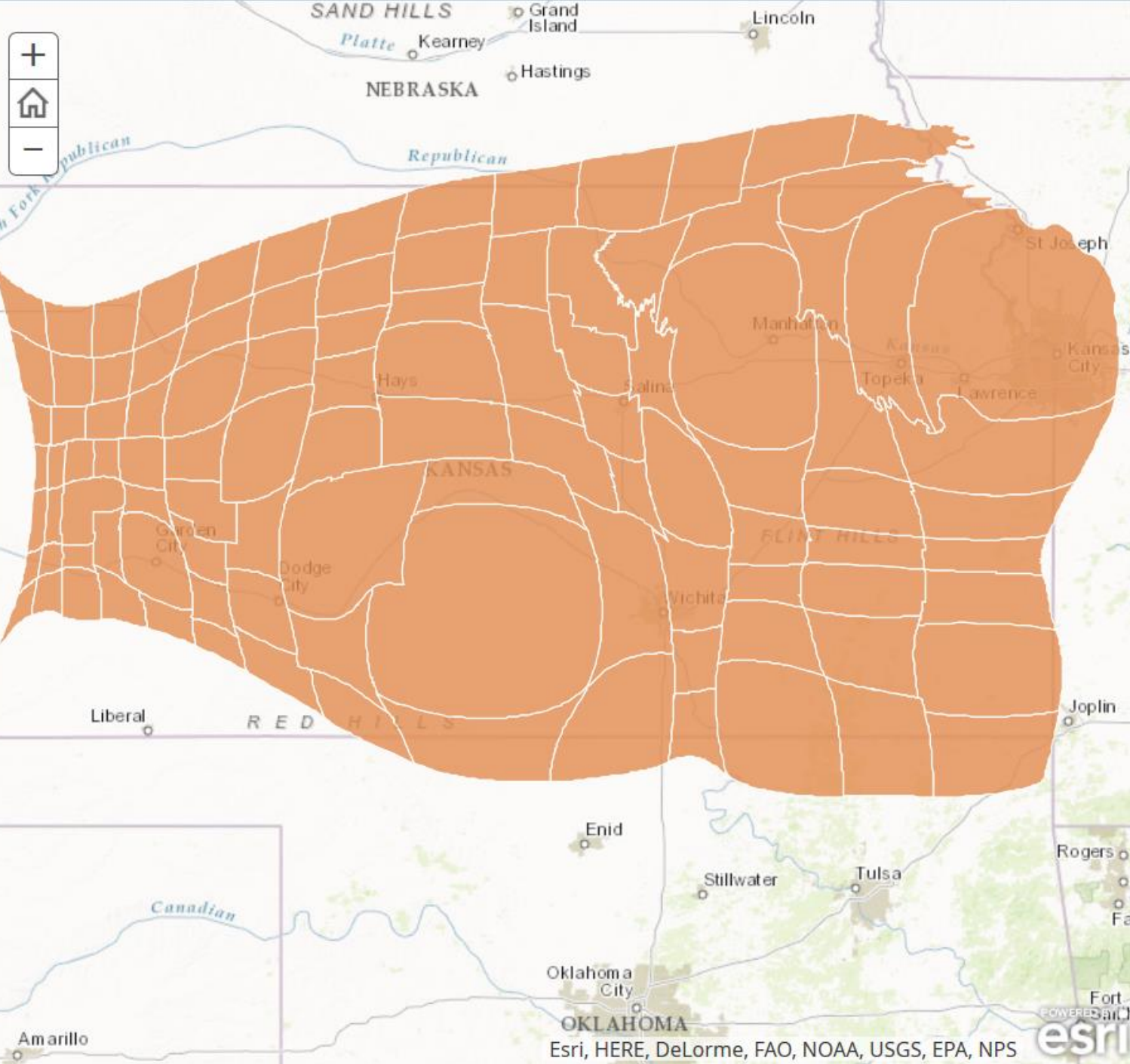
The Dust Bowl

The 1930's brought clouds of dust and devastated the Kansas farm economy.

Sixty-eight of Kansas's 105 counties peaked in population BEFORE the dust bowl.

*Sunday April 14, 1935
Dust Clouds Rolling Over
Stovall Studio, Dodge City, Kansas*

Photo Credit: "Dust clouds rolling over the prairies, Hugoton, Kansas" by Stovall Studio, April 14, 1935 used by permission from kansasmemory.org, Kansas State Historical Society.



Kansas 1940

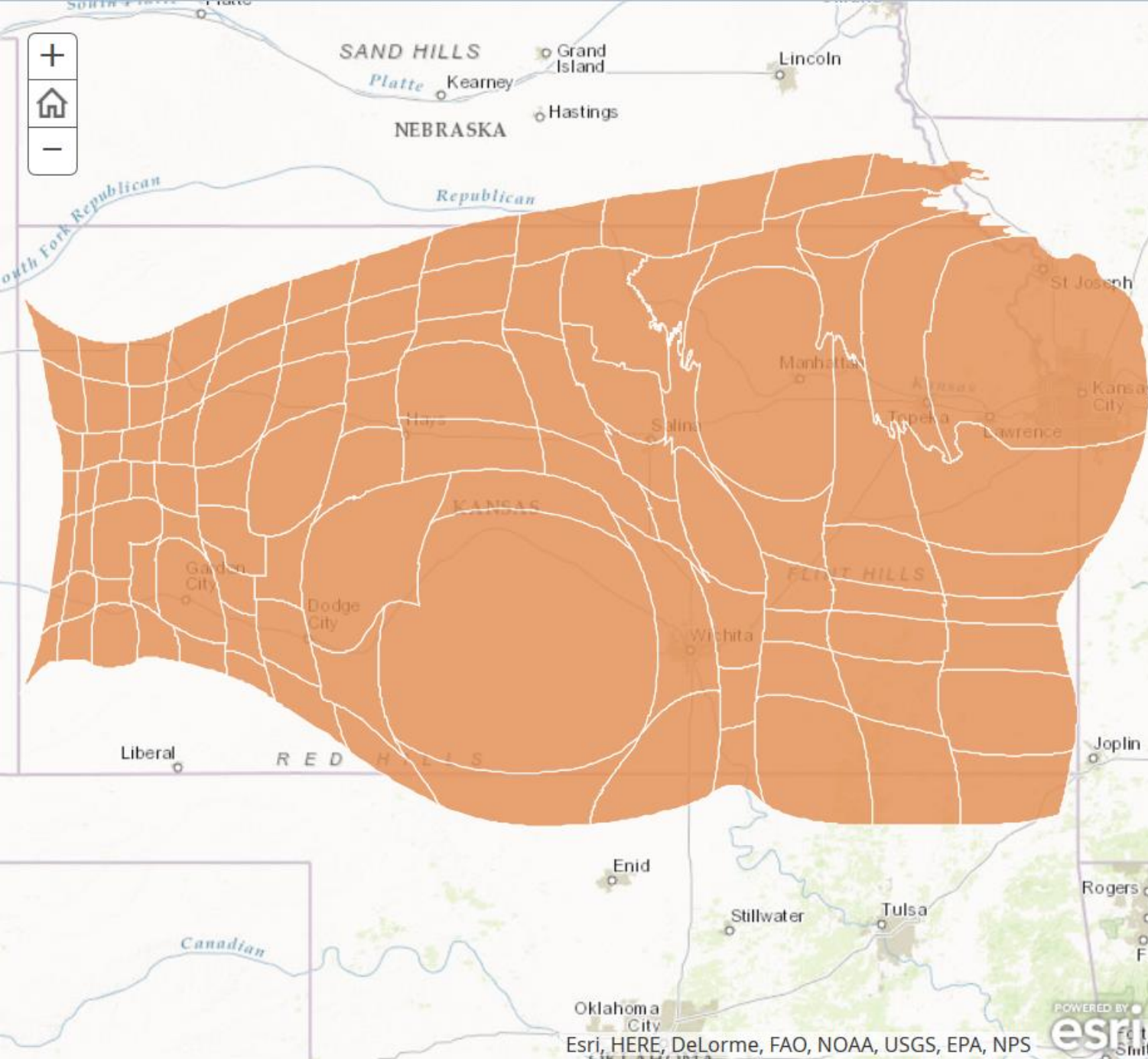
The dust bowl resulted in many people leaving the state or moving to larger cities for employment. The two largest counties are Wyandotte with 145,071 and Sedgwick with 143,311 people.



War Boom

World War II brings a boom to the aviation industry. Firms such as Boeing, Beech, and Cessna employed more than 25,000 aircraft workers in Kansas plants, most of them in Wichita.

Photo Credit: Boeing B-29 assembly line in Wichita, Kansas (1944)
by United States Army Air Forces - United States Air Force
Historical Research Agency.



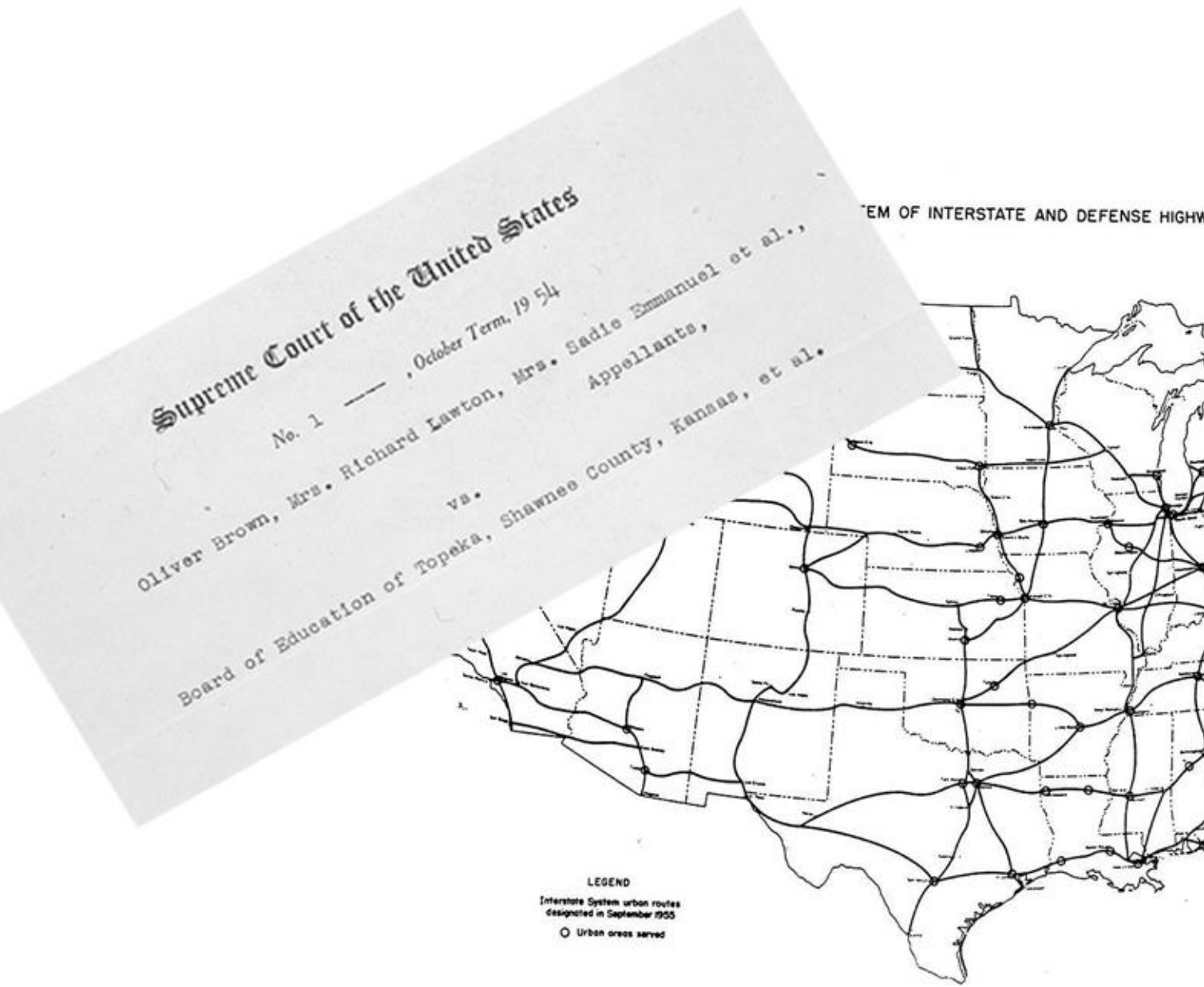
Kansas 1950

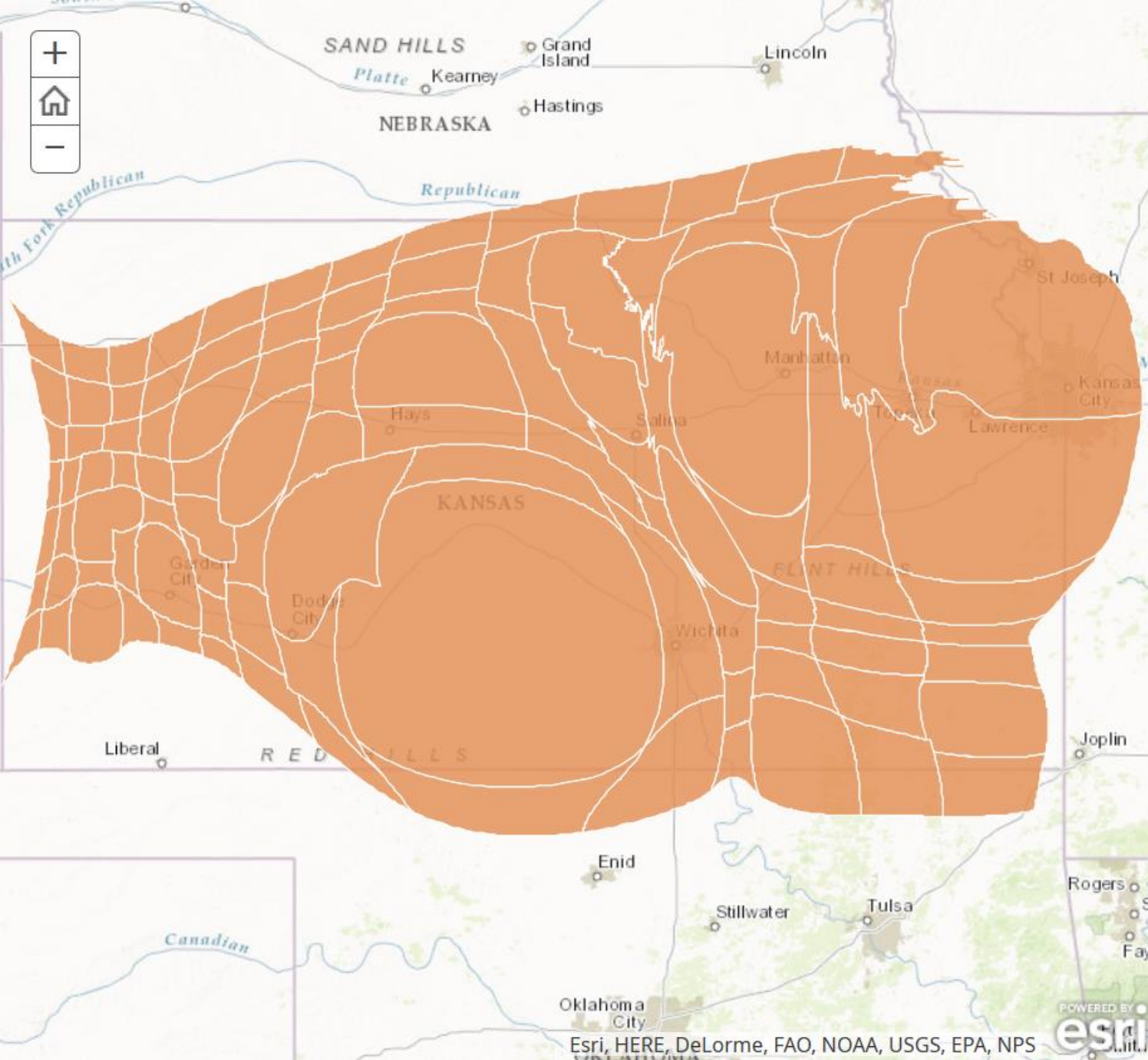
Sedgwick County sees a 55% increase in population from 1940-1950. Fostered by the booming aviation industry, it surpasses Wyandotte and becomes the largest county in the state with 222,290 people.

The 1950s Suburban Migration

Two crucial events led to significant migration in the 1950s. In 1954, the landmark Supreme Court case, *Brown v. Board of Education of Topeka* ruled that separate public schools for white and black students was unconstitutional.

In 1956, President Dwight D. Eisenhower signed into law the Federal-Aid Highway Act of 1956. Better known as the National Interstate and Defense Highways Act, it enabled the construction of 41,000 miles of highway.





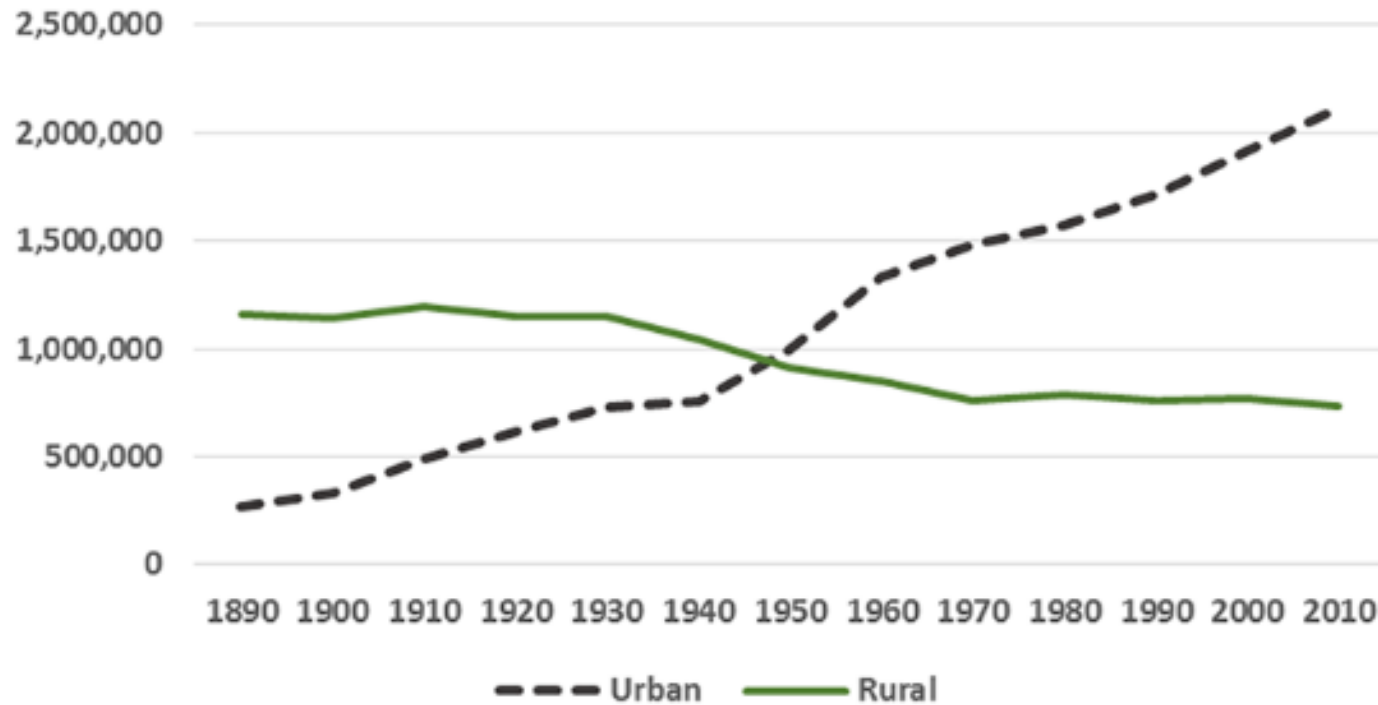
Kansas 1960

Fueled by fears of racial integration and the ease of commuting provided by the Interstate Highway System, the 1950s saw significant numbers of people moving to the suburbs.

From 1950-1960, Johnson County, Kansas more than doubles in population from 62,783 to 143,792. At the same time, Sedgwick County sees an increase of more than 120,000 people. The once thriving Wyandotte County has a modest gain of 20,000 people.

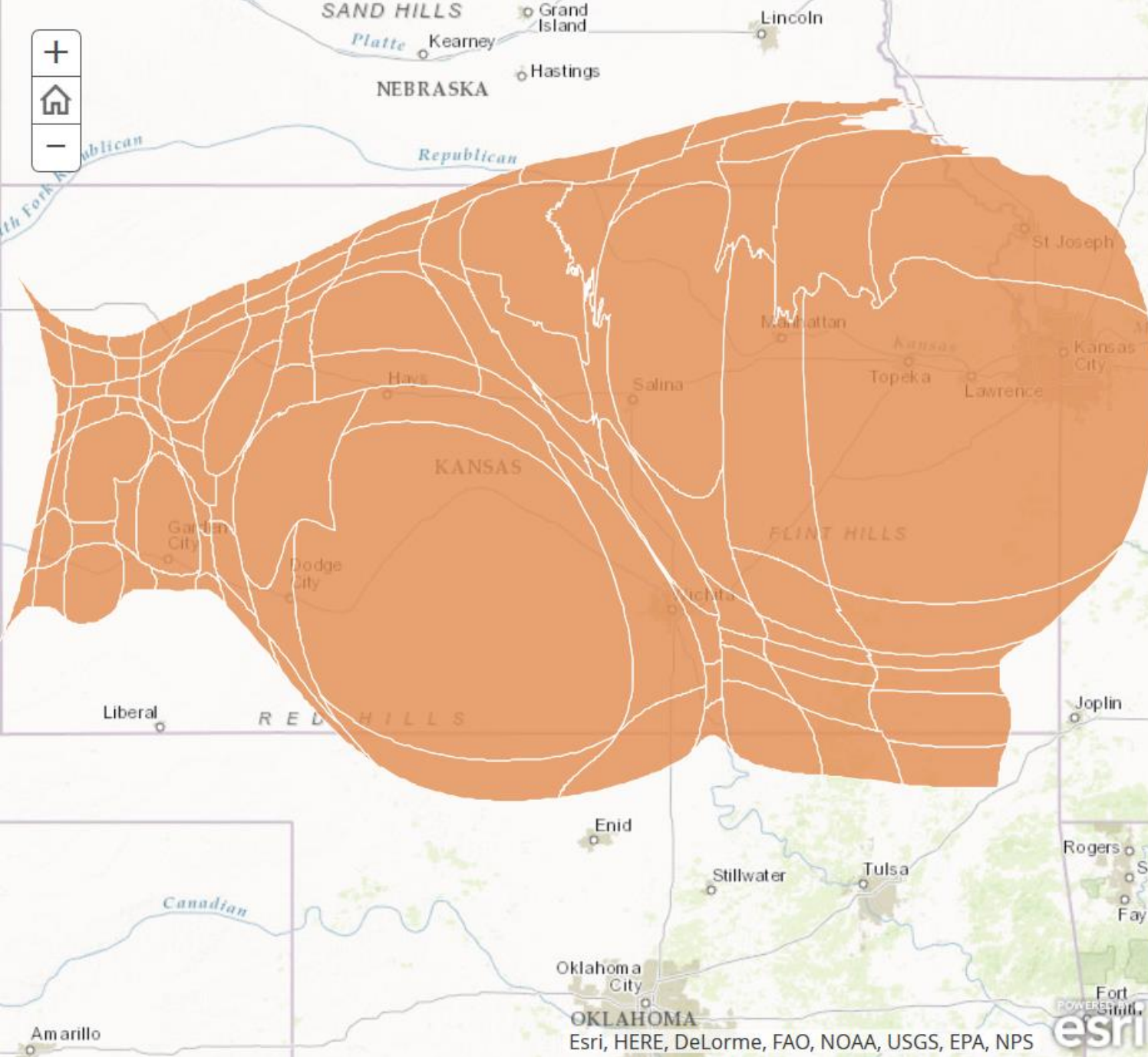
72 Kansas counties peak in population BEFORE 1960.

Urban and Rural Population in Kansas, 1890-2010



Urban Migration Continues

The Kansas population grows at an average of 5% per decade from 1970-2010. The shift from rural to urban continues with rural populations declining.



Kansas 2010

By 2010, 52% of the state's 2.8 million people live in five counties:

- Johnson 544,179
- Sedgwick 498,365
- Shawnee 177,934
- Wyandotte 157,505
- Douglas 110,826

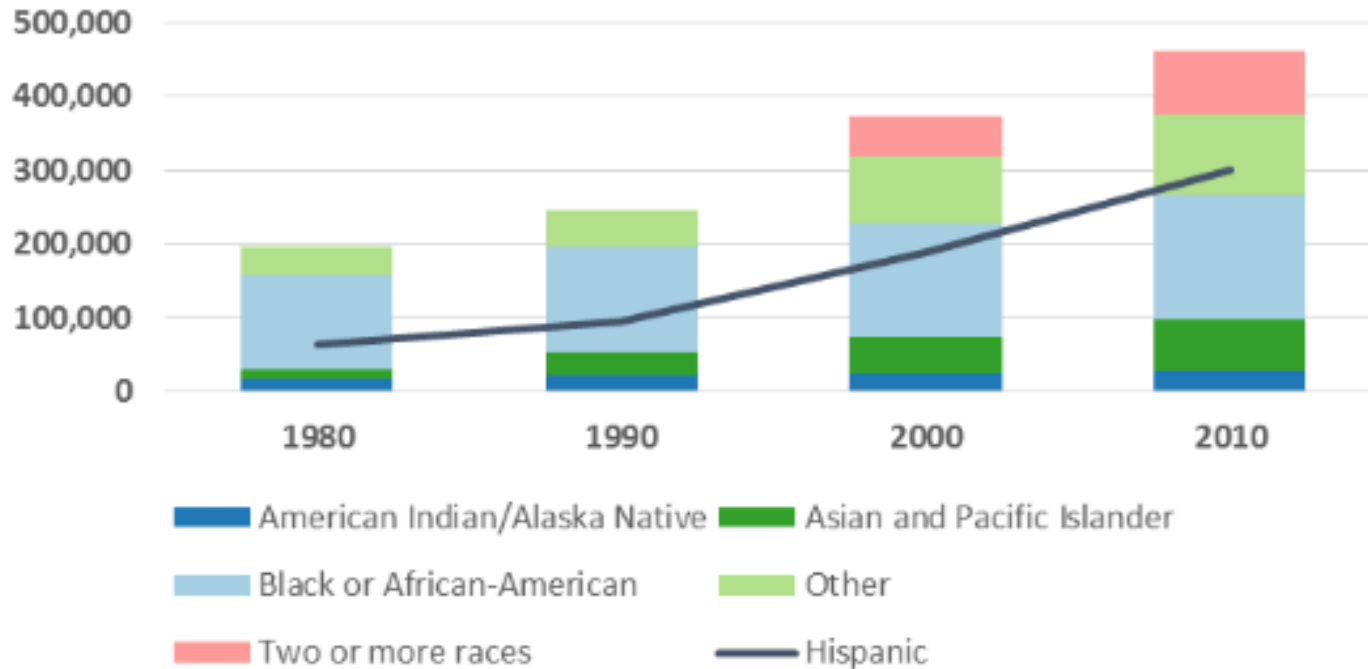
Changing Demographics

While the State has a modest overall population growth of 20% over the 30 years from 1980-2010, the minority population in the state grows at a considerably faster rate. All minority groups grow faster than the overall population.

Increases from 1980-2010:

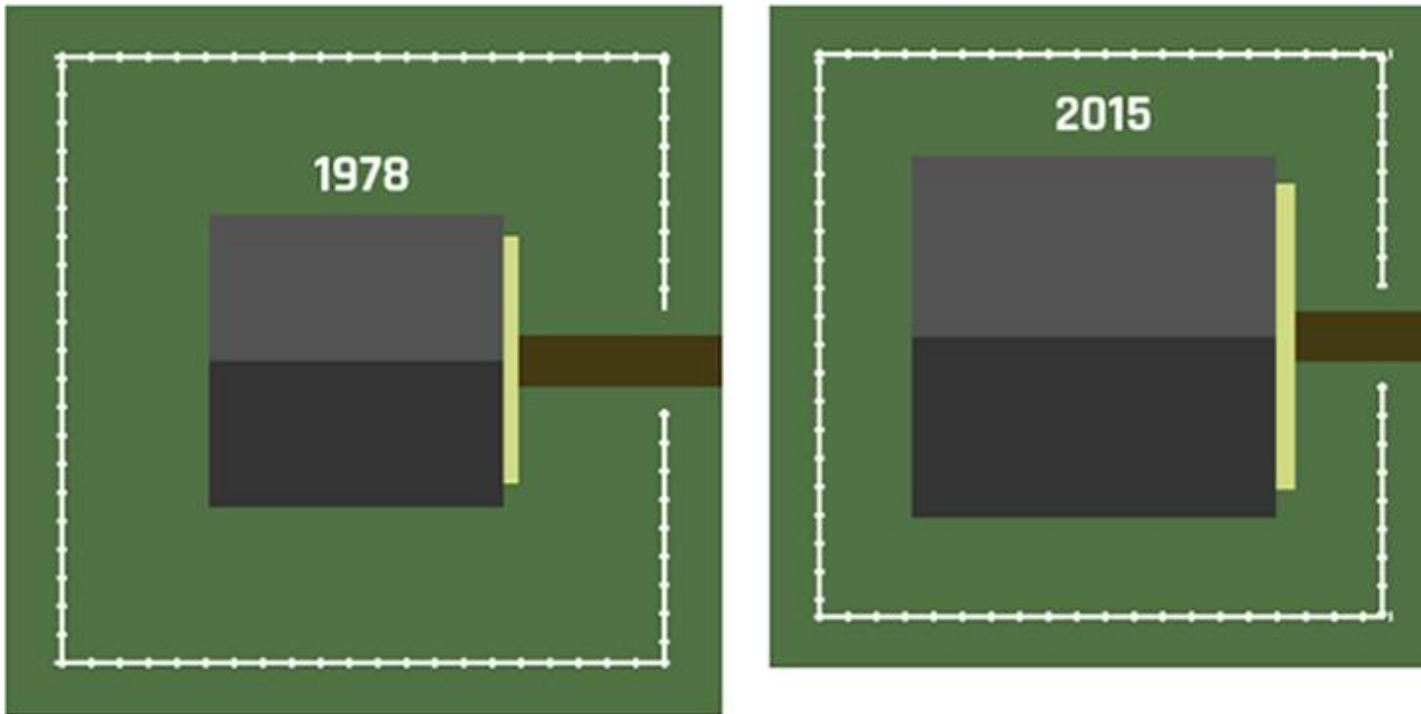
- Hispanic 374%
- Asian and Pacific Islander 364%
- "Other" Race 183%
- American Indian or Alaska Native 83%
- Black or African-American 33%
- White 10%

Population by Race & Ethnicity in Kansas, 1980-2010
(excluding White alone)



Changing Housing Patterns

Average American House and Yard Size, to Scale



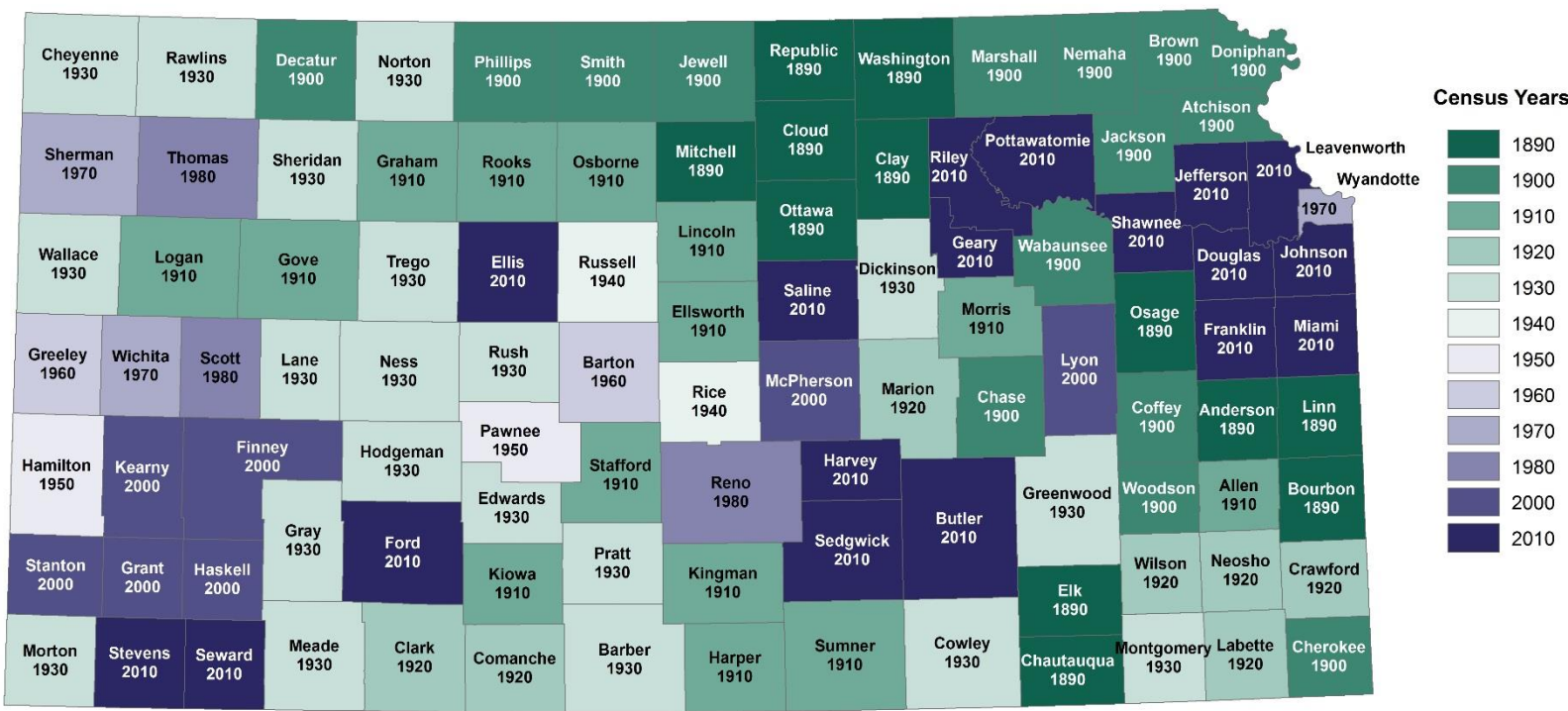
While new houses are larger, they are being built on smaller lots leading to denser neighborhoods.

New single-family homes completed in 2015 in the U.S. are on average 50% larger than in 1978 while the average lot size was 13% smaller.

Source: Andrew McGill, "The Shrinking of the American Lawn", The Atlantic, July 6, 2016.
<http://www.theatlantic.com/business/archive/2016/07/lawns-census-bigger-homes-smaller-lots/489590/>

2020 Census

Census Year of Maximum Population by Kansas County
1890-2010



Source: Institute for Policy & Social Research, The University of Kansas; data from U.S. Census Bureau, Decennial Census.

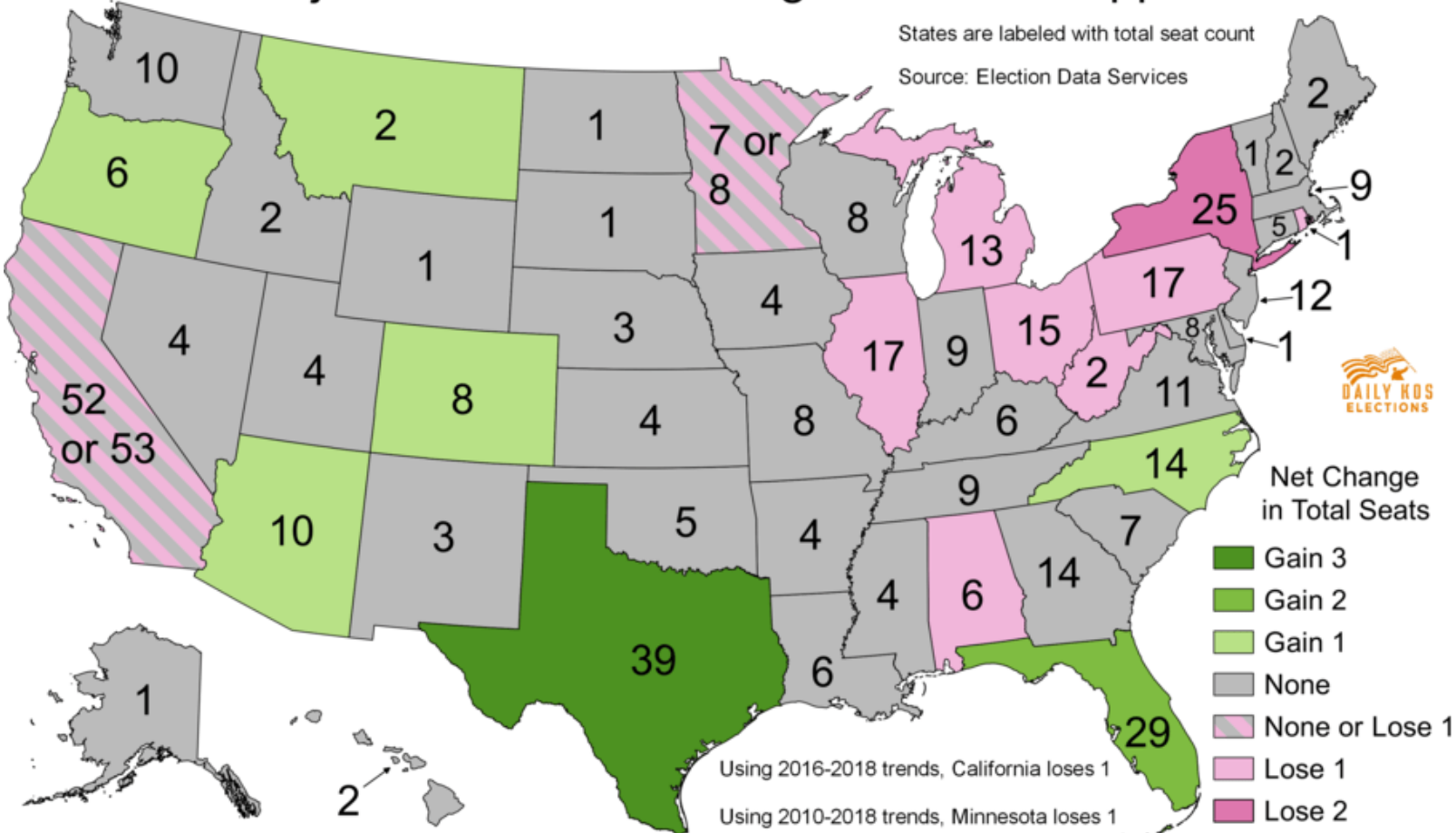
With changes in demographics and housing patterns, what picture will the 2020 Census paint for Kansas?

Kansas Seats in the U.S. House of

Census Projections for 2020 Congressional Reapportionment

States are labeled with total seat count

Source: Election Data Services



2020 Census

2020 Census data will be used to determine the number of seats each state has in the U.S. House (and local representation in the statehouse) and used to distribute billions in federal funds.

COUNTING FOR DOLLARS 2020: KANSAS

Allocation of Funds from 55 Large Federal Spending Programs
Guided by Data Derived from the 2010 Census (Fiscal Year 2016)

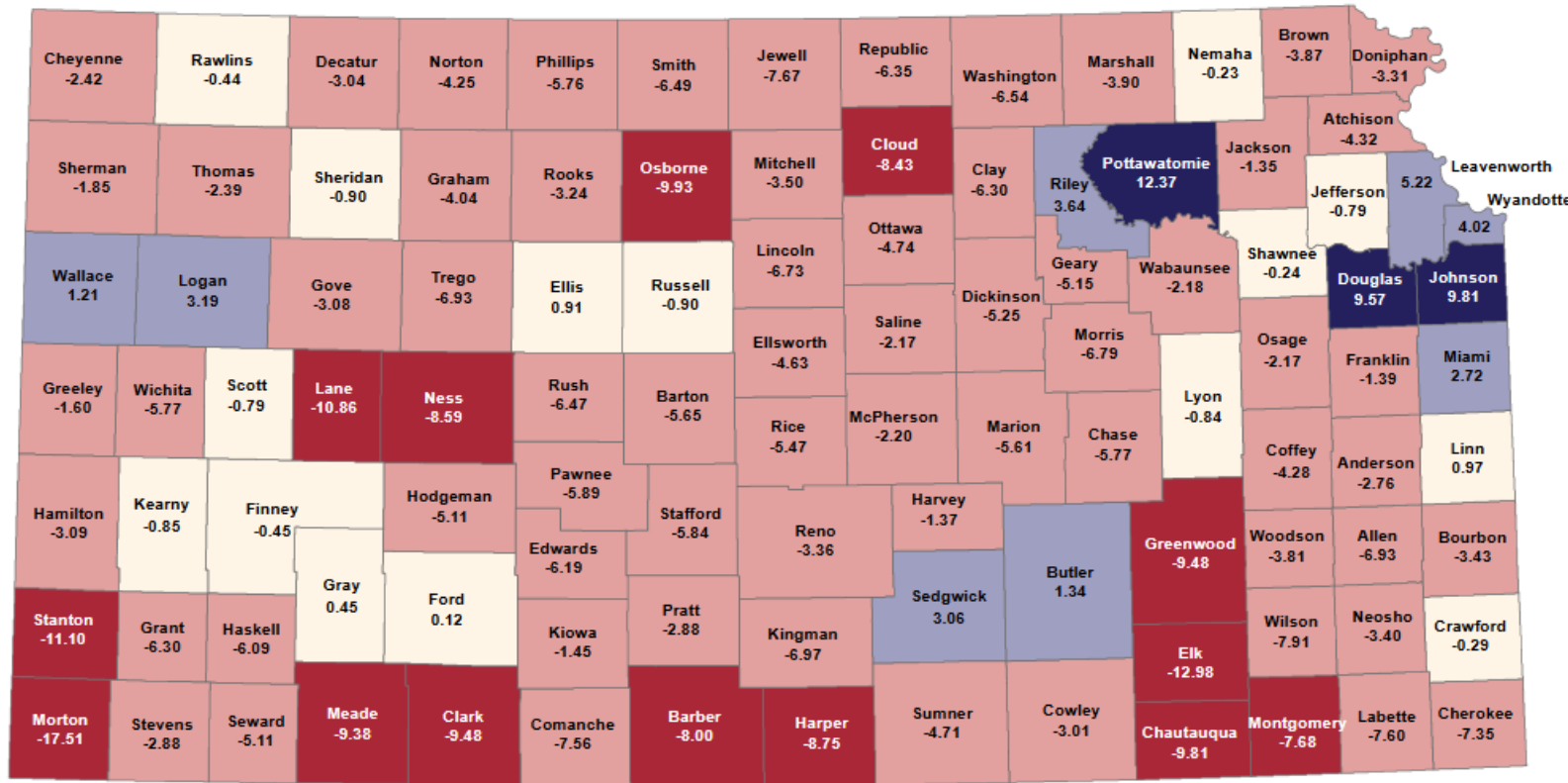
Total Program Obligations: \$6,054,507,586

Program	Dept.	Obligations	Program	Dept.	Obligations
Financial Assistance Programs		\$5,937,347,138			
Medical Assistance Program (Medicaid)	HHS	\$1,942,405,000	Community Facilities Loans/Grants	USDA	\$9,141,400
Federal Direct Student Loans	ED	\$898,447,689	Supporting Effective Instruction State Grants	ED	\$17,921,787
Supplemental Nutrition Assistance Program	USDA	\$342,324,968	Crime Victim Assistance	DOJ	\$9,000,000
Medicare Suppl. Medical Insurance (Part B)	HHS	\$596,190,002	CDBG Entitlement Grants	HUD	\$10,138,465
Highway Planning and Construction	DOT	\$397,153,908	Public Housing Capital Fund	HUD	\$1,700,000
Federal Pell Grant Program	ED	\$221,500,000	Block Grants for the Prevention and Treatment of Substance Abuse	HHS	\$11,899,663
Section 8 Housing Choice Vouchers	HUD	\$65,279,000	Water and Waste Disposal Systems for Rural Communities	USDA	\$14,919,000
Temporary Assistance for Needy Families	HHS	\$101,931,061	Social Services Block Grant	HHS	\$14,349,449
Very Low to Moderate Income Housing Loans	USDA	\$124,715,928	Rural Rental Assistance Payments	USDA	\$13,273,592
Title I Grants to LEAs	ED	\$109,134,862	Business and Industry Loans	USDA	\$14,997,000
State Children's Health Insurance Program	HHS	\$112,201,000	Career and Technical Education - Basic Grants to States	ED	\$10,239,910
National School Lunch Program	USDA	\$106,497,000	Homeland Security Grant Program	DHS	\$3,720,675
Special Education Grants	ED	\$109,746,957	WIOA Dislocated Worker Grants	DOL	\$4,692,230

2020 Census

In FY2016, Kansas received over \$6 billion from the 55 largest programs that distribute funds based on data derived from the 2010 Census.

Percent Population Change in Kansas, by County April 2010 - July 2018



Source: Institute for Policy & Social Research, The University of Kansas;
data from the U.S. Census Bureau, Population Estimates, Vintage 2018.

Percent Population Change



State: 2.05

2020 Census

The decennial census is used to derive annual population estimates which are used as the population controls for the American Community Survey (ACS).

The 2020 Census is a once in a decade opportunity to make sure everyone living in Kansas is counted.

Local input on various programs including:

- Local Update of Census Address (LUCA)
- Boundary and Annexation Survey (BAS)
- New Construction
- Participant Statistical Areas Program (PSAP)
- Count Review

United States®
Census
2020

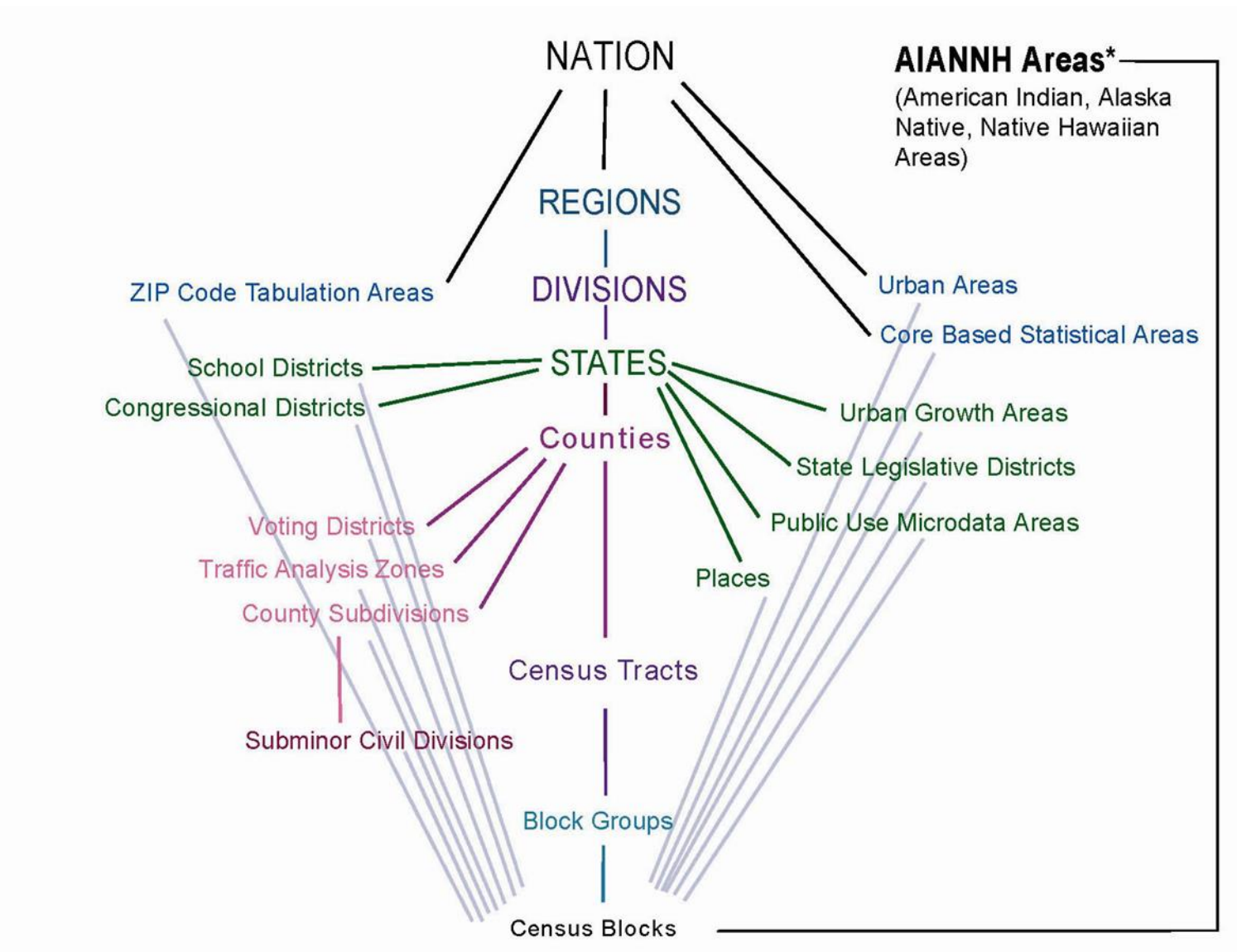
Participant Statistical Areas Program (PSAP)

Participants review and update selected statistical area boundaries for 2020 Census data tabulation following U.S. Census Bureau guidelines and criteria.

Standard statistical geographies include:

- Census tracts.
- Block groups.
- Census designated places (CDPs).
- Census county divisions (CCDs), in selected states.

Hierarchy of Census Geography



Census Tract Guidelines

Census Bureau criteria specify that census tracts must:

- Nest within county boundaries.
- Cover the entire land and water area of the county.
- Be reasonably compact and contiguous.

Table 1: Census Tract Thresholds

Census Tract Type	Threshold Type	Optimum	Minimum	Maximum
Standard Census Tracts	Population	4,000	1,200	8,000
	Housing Unit	1,600	480	3,200

Census Block Group Guidelines

Census Bureau criteria specify that census block groups must:

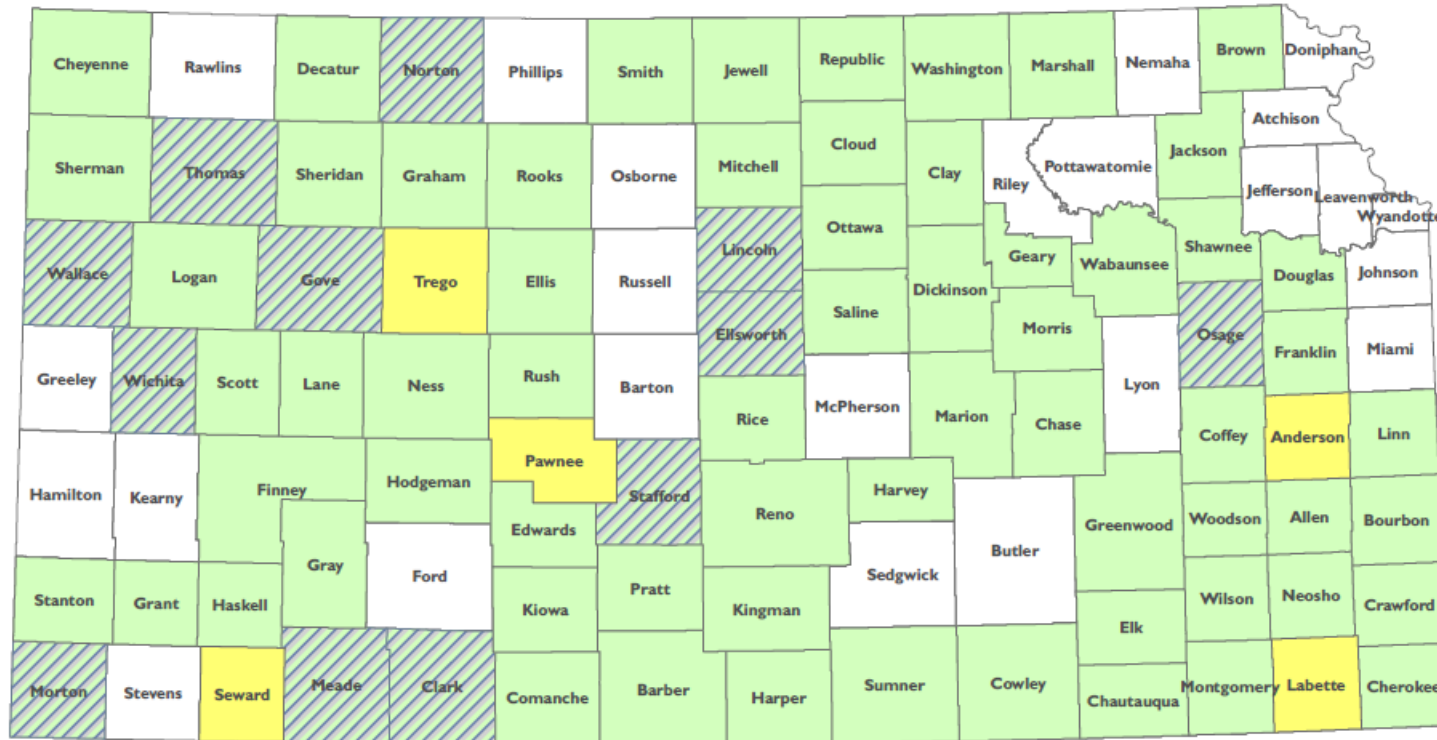
- Nest within census tract boundaries.
- Cover the entire land and water area of each census tract.
- Be reasonably compact and contiguous.
- Have no more than nine block groups (excluding water blocks) contained within a single census tract.

Table 1: Block Group Thresholds

Block Group Type	Population Threshold	Housing Unit Threshold	Area Measurement Threshold
Standard Block Groups	Min.: 600	Min.: 240	None
	Max.: 3,000	Max.: 1,200	None

2020 Census

PSAP Progress Map



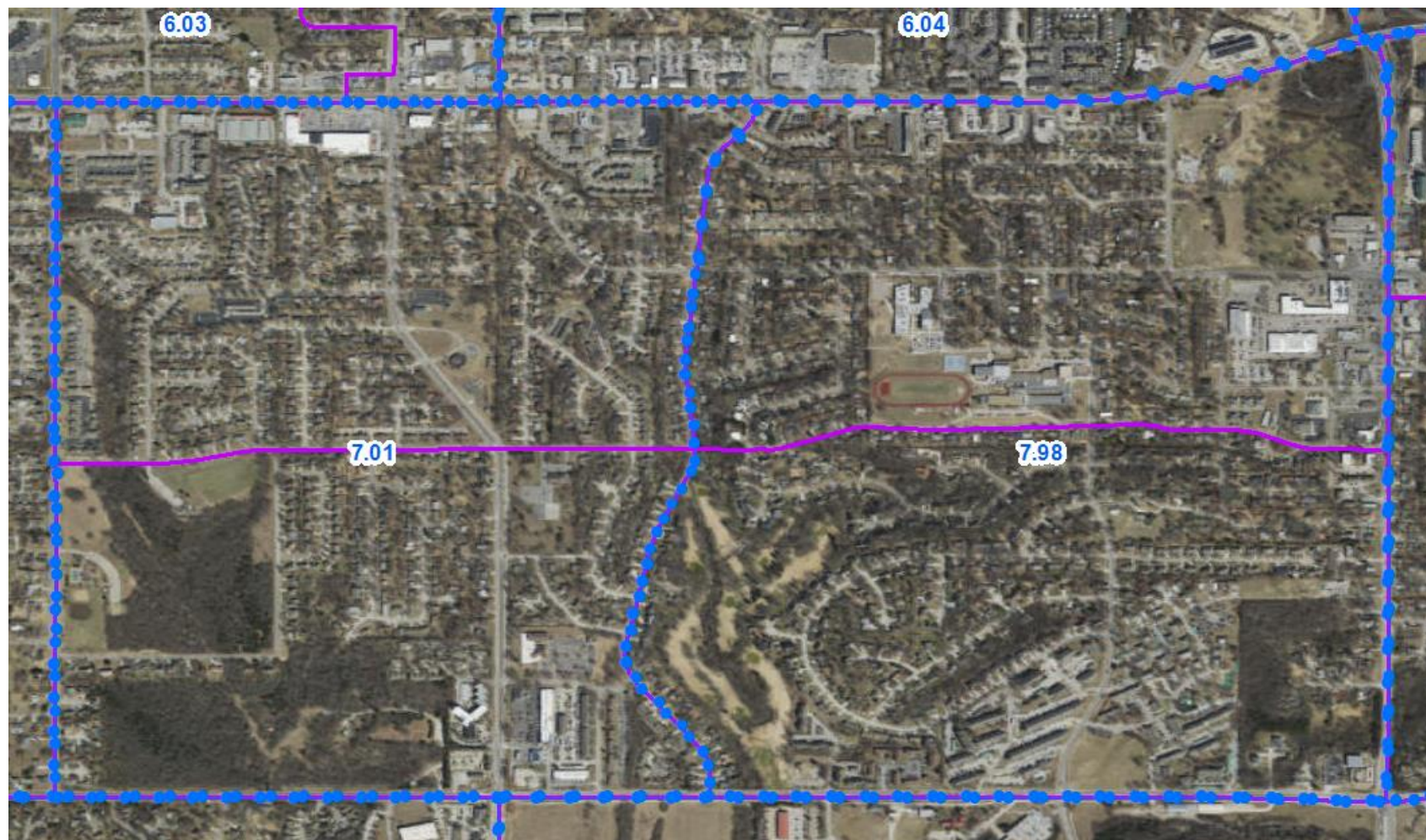
Status as of May 24, 2019

- Jason Submitted
- Submitted (n=64)
- Review Complete - No Changes (n=12)
- In progress
- Waiting on response
- PSAP Counties (n=81)

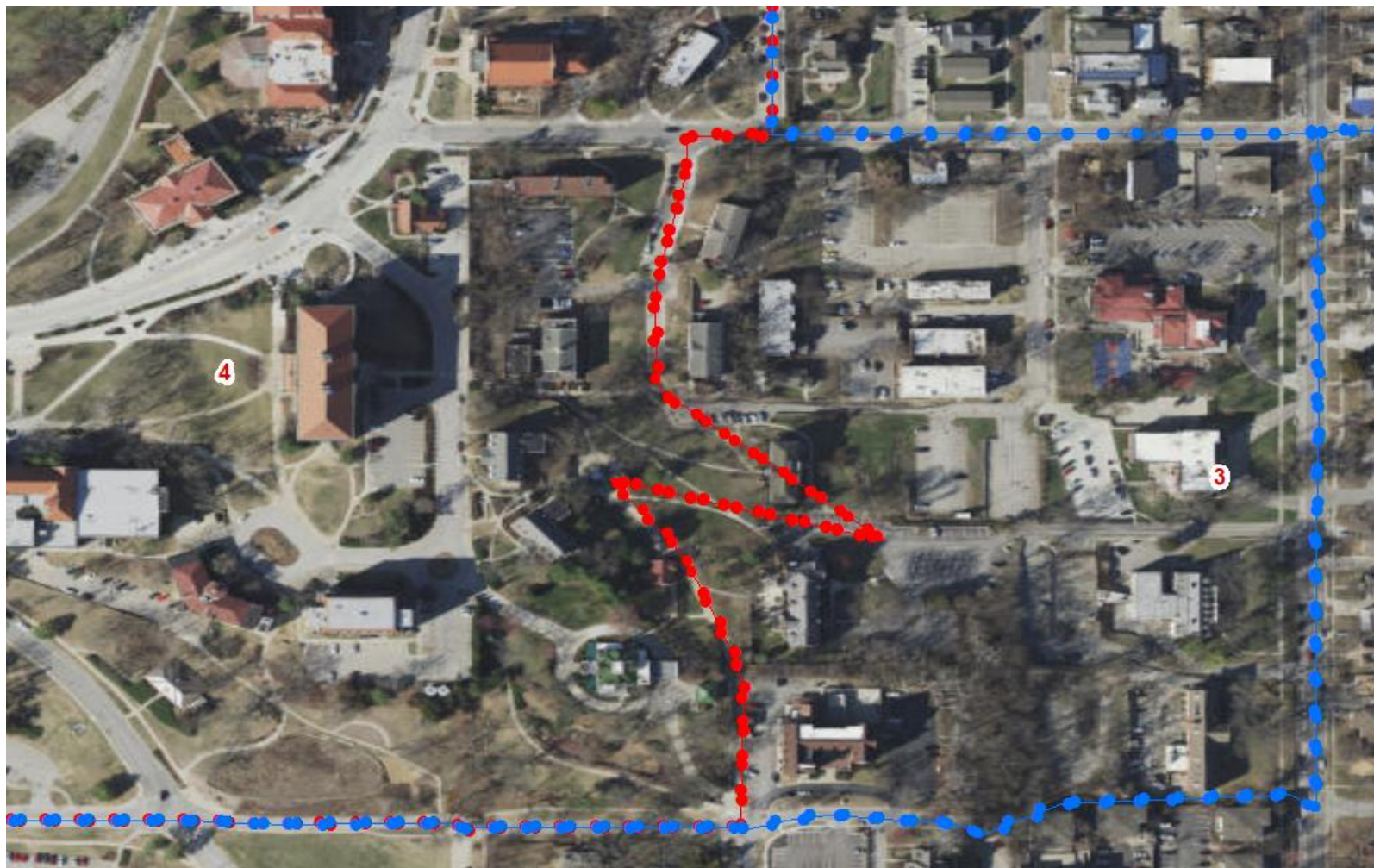
2020 Census



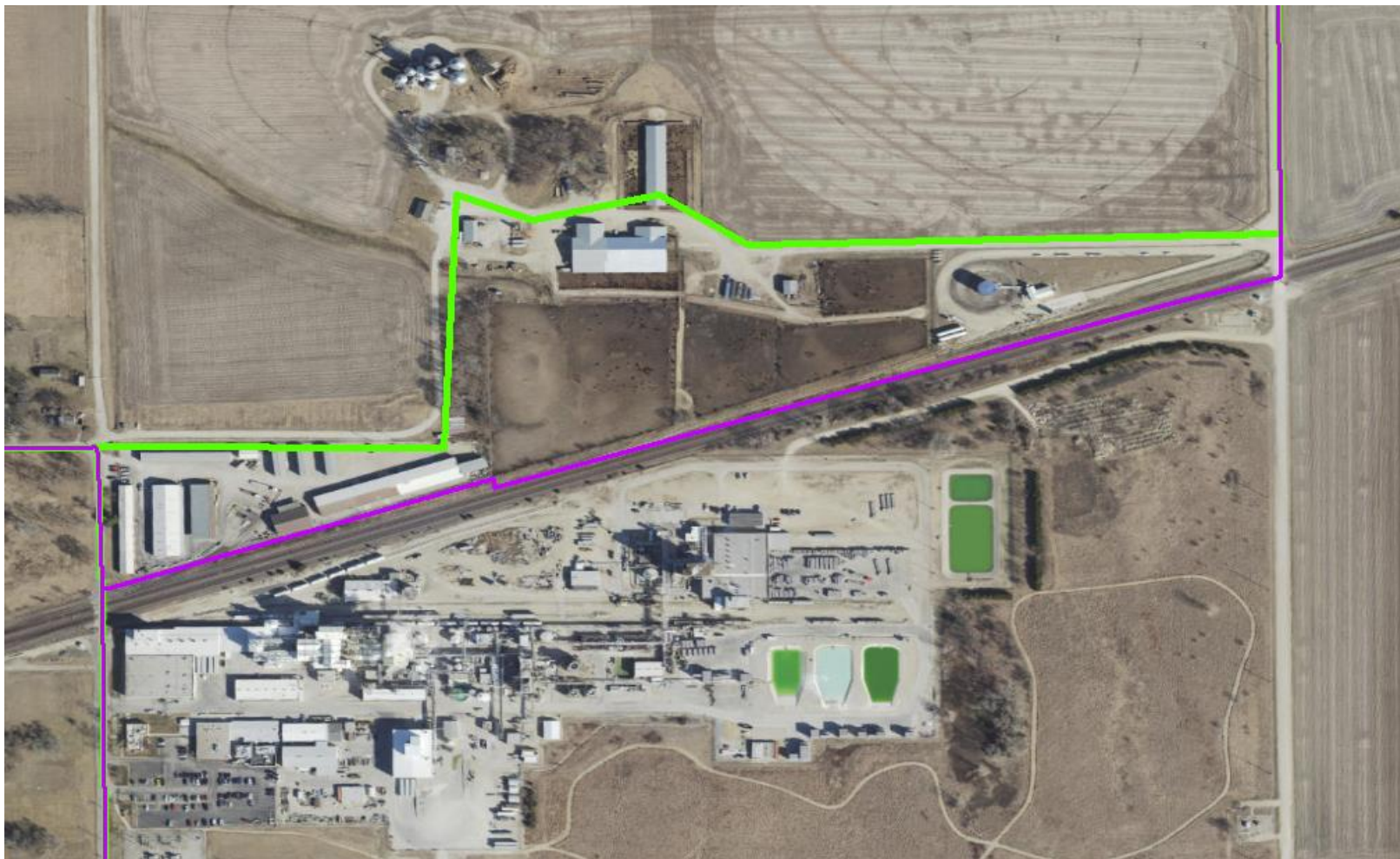
2020 Census



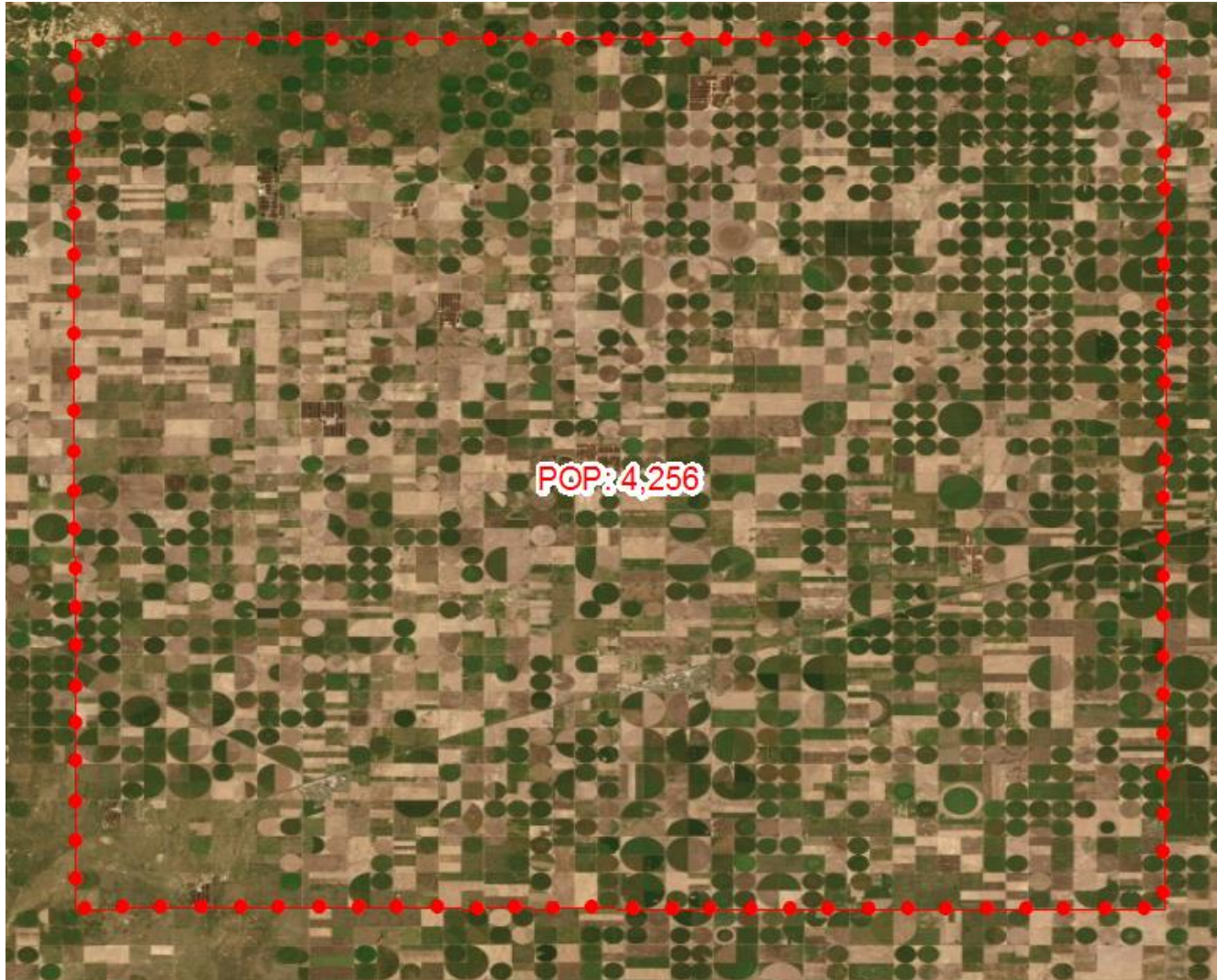
2020 Census



2020 Census



2020 Census



Haskell County, Kansas

Population

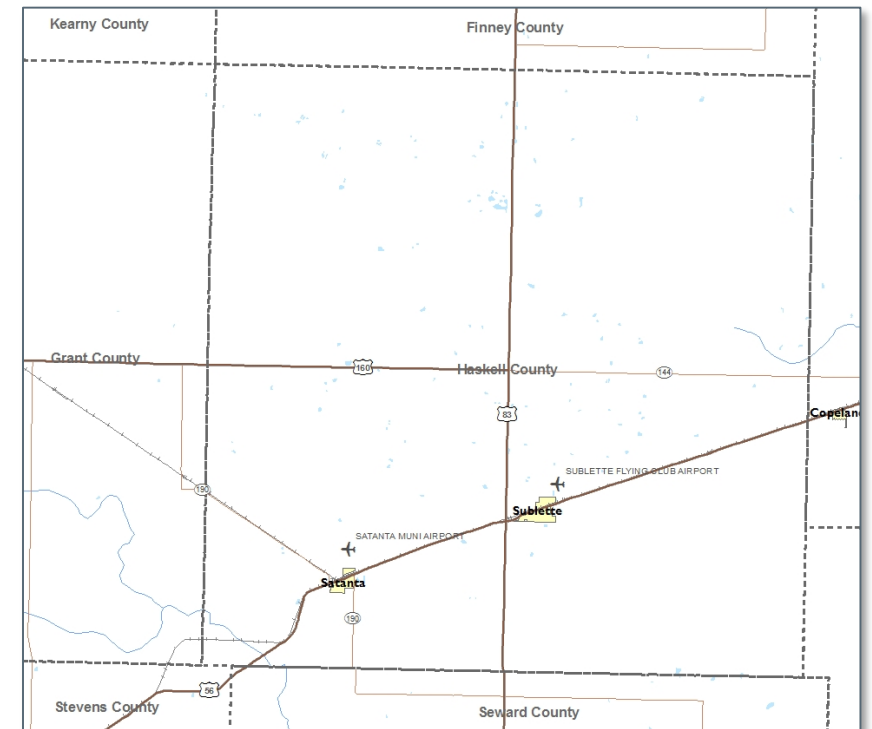
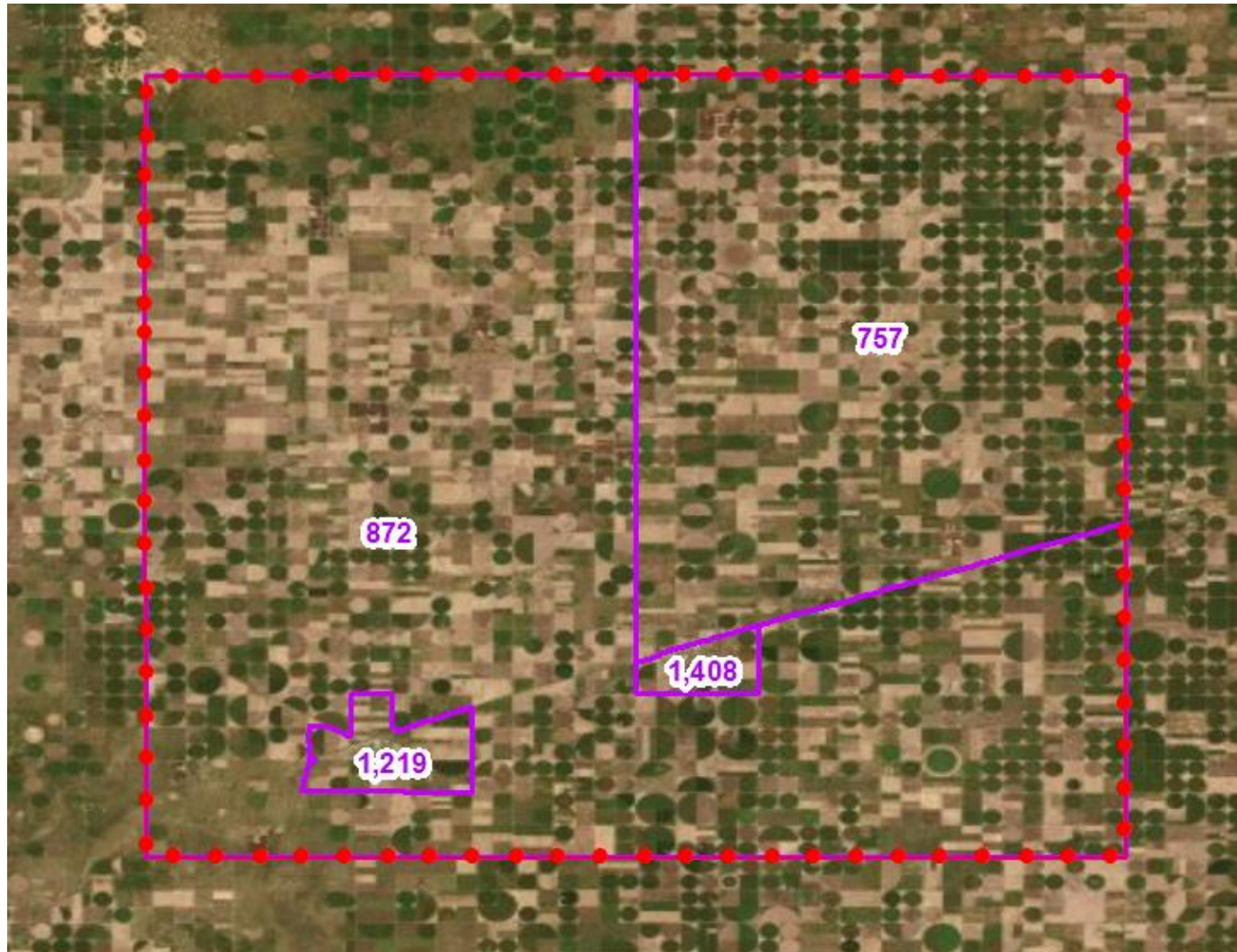
2010: 4,256

2018: 3,997

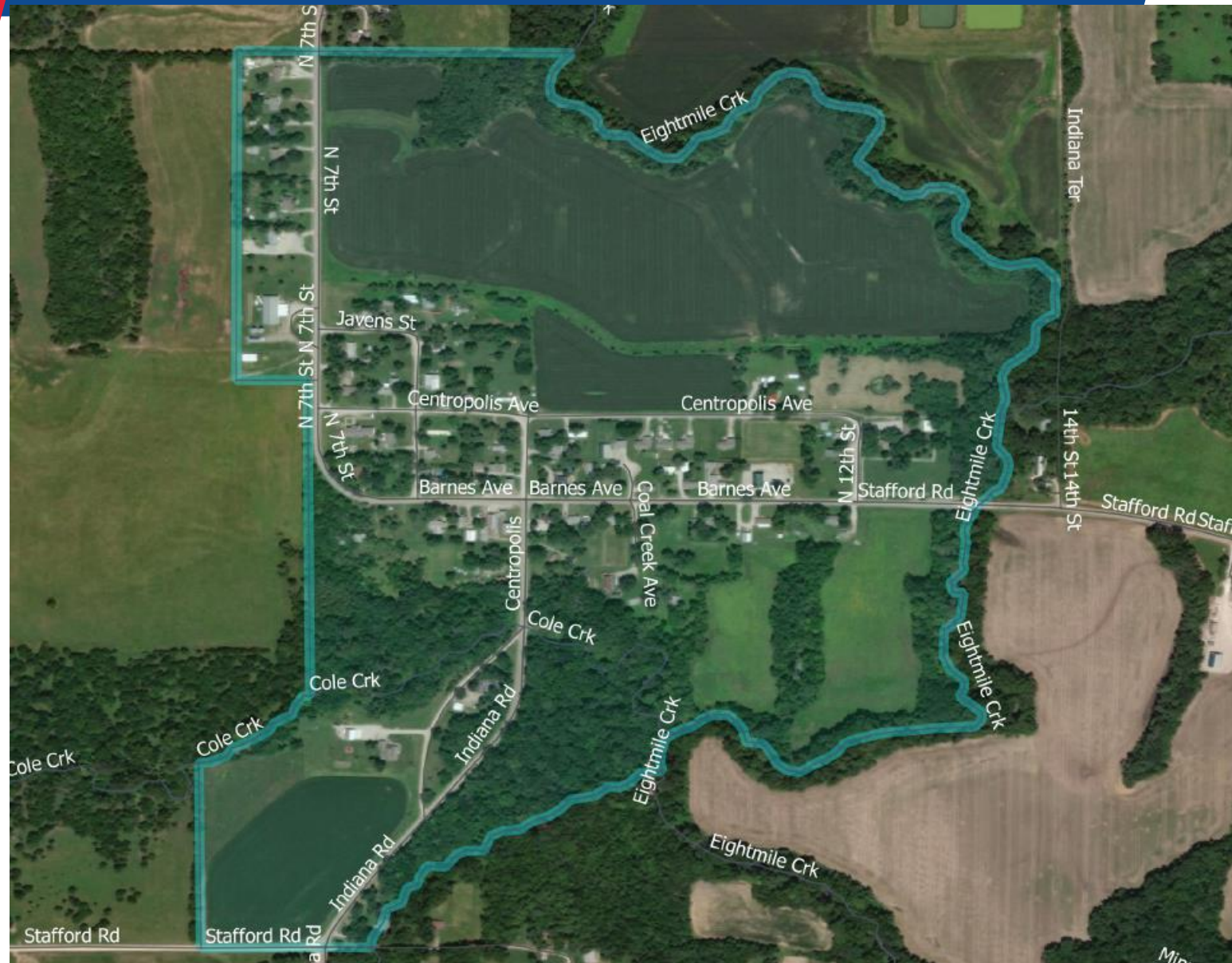
2020 Census



2020 Census



2020 Census



Count Review Operation (CRO)

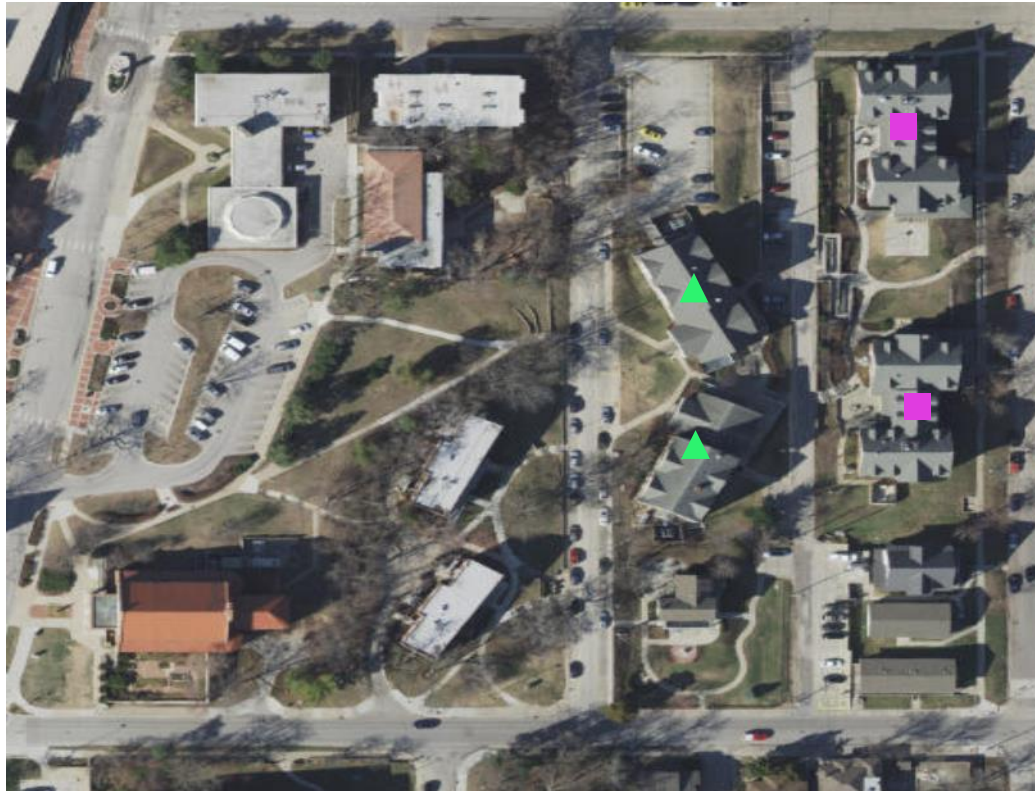


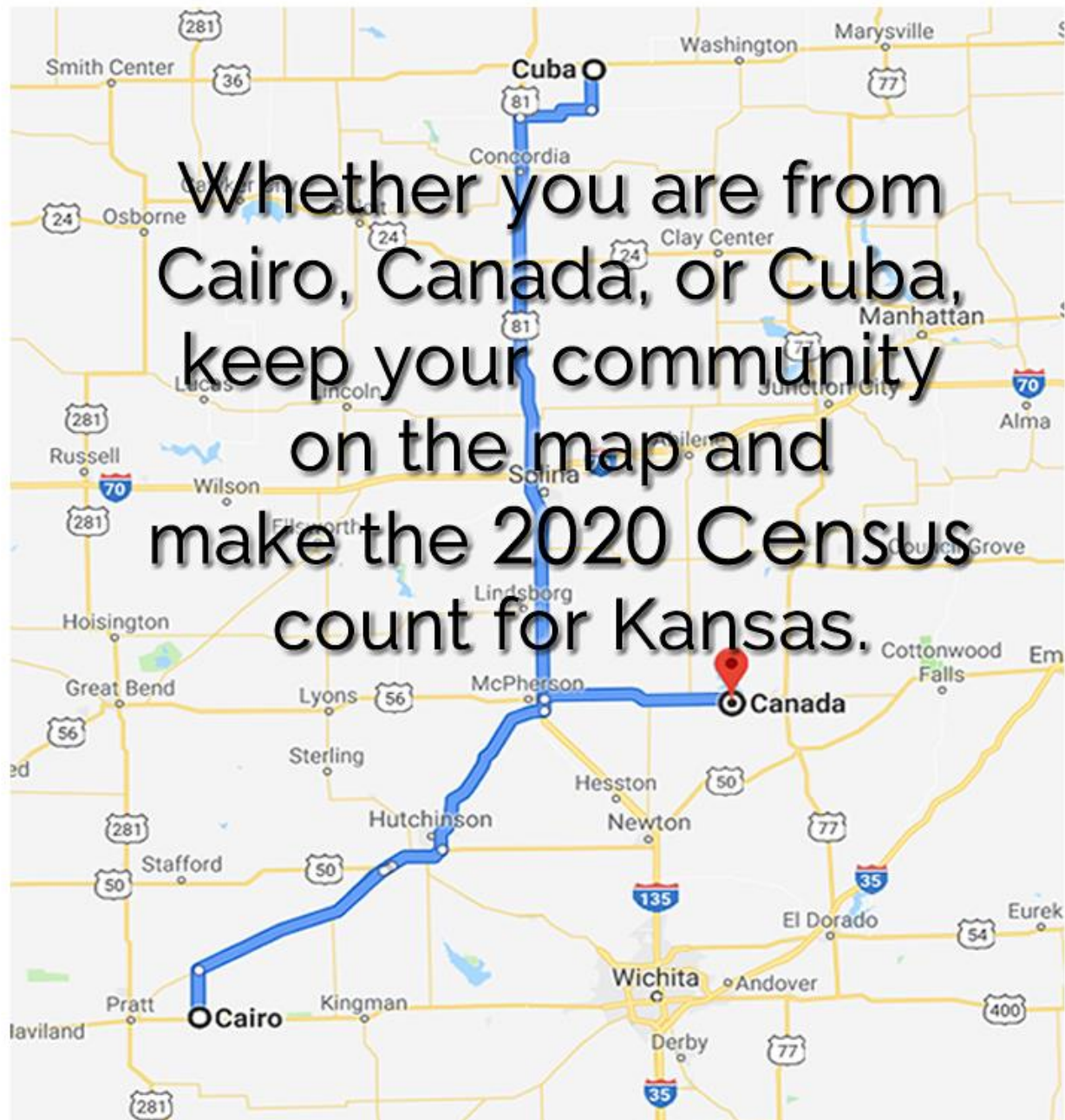
- Filtered data to remove obvious non-residential properties.
- Researched group quarters to assign a name and type.
 - State prisons/Local jails
 - Nursing homes and assisted living facilities
 - College/University student housing
 - Hotels/Motels
 - Campgrounds/RV Parks

2020 Census

Count Review Operation (CRO)

Submitted 1,009,643 residential addresses





Whether you are from
Cairo, Canada, or Cuba,
keep your community
on the map and
make the 2020 Census
count for Kansas.

United States®
Census
2020

KANSAS COUNTS
CENSUS **2020**

The background of the image is a night-time photograph of the University of Kansas campus, featuring the Old Chapel and the Campanile tower. The image is overlaid with a dark blue tint and several thick red diagonal lines. On the left side, there are several thin white horizontal lines.

KU INSTITUTE FOR POLICY & SOCIAL RESEARCH

The University of Kansas